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ABSTRACT

This study examined the relationship between attitudes of student teachers and ratings of student teachers according to characteristics deemed most desirable of teachers. The Minnesota Teacher Attitude Inventory (MTAI), which purportedly predicts how well a teacher will get along in interpersonal relationship, was chosen as the instrument to obtain expressions of attitudes of student teachers to children and school work. Characteristics of a teacher which were deemed most desirable by school administrators were assumed to be those items included on forms used to obtain staff recommendations. The study was initiated just before the conclusion of a semester of student teaching. Within the limits of this investigation, little relationship was found to exist between the attitude of student teachers as expressed at the end of a student teaching experience and the ratings of characteristics desired by school administrators. The paired comparison technique for assessment of desired teacher characteristics provided an operational taxonomy for determining the strongest characteristics of a student teacher. (Tables with results are included as appendixes.) (JA)

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RELATIONSHIP BETWEEN ATTITUDES AND CHARACTERISTICS OF STUDENT TEACHERS

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RELATIONSHIP BETWEEN ATTITUDES AND CHARACTERISTICS OF STUDENT TEACHERS

Professional literature in education contains many reports of attempts which have been made to study and classify the characteristics of the ideal teacher (9, 10). While most educators might agree that effective teachers should possess certain desired characteristics, some would suggest that attitude of teachers toward students is a better criteria (1, 19). Investigators have also attempted to predict which student teacher will become a successful teacher (3, 7, 16). The purpose of this study was to examine the relationship between attitudes of student teachers and ratings of student teachers according to characteristics deemed most desirable of teachers.

The most popular instrument for measurement of teacher attitudes has been the Minnesota Teacher Attitude Inventory (MTAI). More than 50 research studies using this instrument have been reported (9). Studies of the relationship between attitudes measured by the MTAI and teacher characteristics have been reported with varying results. Leeds (12) reported a significant correlation ($r = .434$) between rating by principals and MTAI responses by 100 randomly chosen elementary teachers while Chappel and Callis (5) found that the MTAI was not significantly related to ratings by superiors ($r = .18$ with $N = 82$). Sandgren and Schmidt (15) divided 393 respondents to the MTAI into upper-middle-lower groups on the basis of MTAI scores and found no significant relationship between

MTAI score and critic teacher's rating of teacher effectiveness. The role of teacher training institutions, teaching load, teaching experience, subject taught, and personality measures as assessed by MMPI, GZTS, and Kuder instruments have also been reported (8, 9, 13).

Ryans' Teacher Characteristics Study (14) is the most extensive investigation of teacher characteristics. The study was conducted to aid in the selection of teachers for employment who had characteristics deemed important and desirable, and to aid in the selection of teacher candidates. Ryan's work was limited to estimation of teacher characteristics from correlates or symptoms.

METHODS

Attitude Inventory

The MTAI was chosen as the instrument to obtain expression of attitudes of student teachers to children and school work. The MTAI purportedly predicts how well a teacher will get along in interpersonal relationship. The published form (Form A) of the Inventory has been subjected to several studies of validation to include susceptibility to faked responses. The MTAI measures attitudes with high reliability and these attitudes have been correlated significantly with teacher-pupil relations in the classroom.

Authors (6) of the MTAI state in Section IV of the manual that the Inventory was constructed with items from five areas of socio-education literature to include:

1. Moral status of children in the opinion of adults, especially as adults impose standards.

2. Discipline and problems in the classroom and elsewhere plus methods employed to deal with such problems.

3. Principles of child development and behavior related to ability, achievement, learning, motivation, and personality development.

4. Principles of education related to philosophy, curriculum, and administration.

5. Personal reactions of the teacher to include likes, dislikes, and sources of irritation.

In order to study the responses of student teachers to the MTAI statements as classified according to the five dimensions, items of the MTAI which seemed most representative of each area and which were most easily classified were selected from each of the five dimensions prior to the application of the Inventory (4). Totally, 90 of 150 items were selected to include 14 moral status, 19 discipline, 18 principles of child development and behavior, 22 principles of education, and 17 personal reaction items.

Student Teacher Rating Instrument

Characteristics of teachers which were deemed most desirable by school administrators were assumed to be those items included on forms used to obtain staff recommendations. When items included in an extensive collection of recommendation reference forms were assembled and collated, three broad categories or clusters of desirable teacher characteristics and qualifications were apparent. Six general, nine professional, and ten personal qualifications appeared repeatedly. These characteristics were organized into a paired comparison evaluation instrument (17). The paired comparison technique utilized

in this investigation provided an "operational" taxonomy for determining the relative relationship of several qualifications which characterize the ideal teacher.

The format for the paired comparison for the six most common items in the general category is illustrated in Figure 1. The six characteristics were paired in all possible combinations; the order of each resulting pair was determined by flipping a coin, and arrangement of the pairs was determined by random selection. Similar formats were devised for nine commonly mentioned professional items, and ten personal items. Scores used in this analysis were derived by counting, for each of the variables, the number of times it was chosen over the paired variable. When the paired comparisons were totalled as illustrated in Figure 2, a ranking of characteristics within each category was obtained for each individual.

During the 1964-65 academic year this paired comparison student teacher rating instrument was given a preliminary trial to determine the effectiveness of the procedure as a tool to evaluate student teachers as well as to determine the administrative feasibility of the instrument as a rating device. The cooperating teacher(s) and supervising professor for each student teacher completed the rating form in addition to traditional techniques of student teacher rating. Preliminary study revealed that qualitative judgments of a rather intangible sort, and possibly loaded with personal opinion, were amenable to quantitative analysis. A set of numerical values were obtained by which judgment could be summarized in generalized form. Preliminary study also established that characteristics and

qualifications within each of the three categories tended to be independent.

Subjects

Beginning with the fall semester of the 1967-68 academic year and continuing through the spring semester of 1969, the MTAI and the paired comparison rating instrument were used to obtain attitude scores and student teacher rating scores on 31 male subjects. The four semesters involved in this time schedule were regarded as four replications of the study. Proportional but unequal number of the 31 subjects were included within each of the replications. Each of the 31 subjects participated in a student teaching experience for one-half day, five days a week for an 18 week semester and in addition fulfilled a concurrent extracurricular responsibility. Subjects were limited to student teachers not otherwise enrolled or involved in professional education preparation courses.

Test Administration

The MTAI was administered just before the conclusion of a semester of student teaching. Standard administrative procedures were precisely executed. Each subject recorded his answer to each of the 150 statements on the designated answer sheet. Each of the MTAI answer sheets was hand scored with specially prepared "right" and "wrong" keys which included only the inventory items selected for the designated dimension but included the three steps outlined in the Manual (6). The MTAI Manual explains that no "right" or "wrong" answers exist, but merely agreement or disagreement with inventory statements. In order to avoid a change in terminology, the commonly used labels were retained although it was not intended to imply that the responses were either correct or incorrect. Responses were

tabulated by dimensions on specially prepared tables (4). Scores for each student teacher respondent included the number of right minus wrong items within each of the five dimensions of the MTAI. These obtained dimension scores were punched into individual data cards. In addition response to each of the 90 selected items were transferred to punched data cards.

The paired comparison student teacher rating instrument was completed by the student teacher's cooperating teacher(s) and by his supervising professor. The rating of the paired comparisons were computed for each of the characteristics in each of the three categories and then averaged. The averaged rating for each of the 25 characteristics was punched into individual data cards.

Analysis

The three sets of data cards were collated and submitted to a CDC 6600 computer with appropriate programs to obtain:(a) correlation coefficients between items in each of the three categories of student teacher ratings, between the scores on the five dimensions of the MTAI, and between the student teacher ratings and the dimension scores of the MTAI, (b) hierarchical grouping of the student teacher rating scores of the 31 student teachers and (c) multidiscriminate function analysis of the MTAI dimension responses by the four replications and by the hierarchical clustering of student teacher rating scores.

RESULTS

Correlation coefficients between the items in each of the three categories

of the student teacher rating instrument are presented in Tables 1, 2, and 3. Since the criterion score for rating of student teachers was determined by a paired comparison process, items within each category were expected to be independent or to have a negative relationship. This expectation was observed for the six general characteristics included in Table 1. Three exceptions were observed for the nine professional qualifications included in Table 2. The item, willingness to accept suggestions, had a positive relationship to cooperative nature; administrative ability had a similar relationship to initiative as did teaching methods to knowledge of activities. Five exceptions were observed for the ten personal qualifications included in Table 3. Health and vigor had a positive relationship to poise and confidence, and to skill. Skill was also positively related to voice quality. Democratic characteristic was positively related to sense of humor, and to tactfulness.

Correlation coefficients between the total scores on the five dimensions of the MTAI are presented in Table 4. With two exceptions, a significant positive relationship was observed between the dimension scores. Results of the multi-discriminate function analysis of the items within each of the five dimensions of the MTAI by the four replications are presented in Table 5 and support the conclusion that the four groups used to replicate the study did not have significantly different responses to the MTAI. Moreover, no item in the five dimensions had a significant univariate F value for difference between groups responses.

Correlation coefficients between the five dimensions of the MTAI and the items in the three categories of characteristics of teachers are presented in Tables 6, 7, and 8.

Within the characteristics included in the general category of ratings of student teachers only three significant r values were observed (Table 6). Excellence of preparation had a significant negative correlation to the MTAI scores on discipline and moral status. Significant positive correlation was obtained between the rating on emotional maturity and the response to the MTAI dimension, personal items.

Correlation coefficients between ratings on the nine professional qualifications and response to the five MTAI dimensions resulted in only one significant positive correlation (Table 7). However, several professional qualification characteristics had significant negative correlations. Careful observation revealed that the characteristic, use of English, correlated significantly with scores on moral status. The rating of the student teacher on cooperativeness had a significant negative correlation with the response to the MTAI score in principles of education. Ratings on knowledge of activities had significant negative correlation with student responses on three of the five MTAI dimensions: discipline, child development, and principles of education. Ratings on teaching methods had significant negative correlation with the MTAI discipline scores.

Within the category of personal qualifications of teachers several significant positive correlations and several significant negative correlations were obtained (Table 8). Positive correlation existed between the personal qualification of democratic and MTAI scores in the personal dimension as did enthusiasm with child development scores. Ratings on sense of humor of teachers had significant correlation with discipline scores and with personal reaction scores of the MTAI.

Several other personal qualifications items had significant negative correlation with discipline scores and with principles of education scores. Rating on poise and confidence had negative correlation with MTAI scores for principles of child development as did ratings with response to moral status items. Ratings on the skill of the teacher had significant negative correlation with personal reaction items and the $\underline{r}$ value approached significance for each of the other dimensions of the MTAI. Ratings on voice of the teacher had significant negative correlation with principles of child development scores and personal reaction scores.

Hierarchical clustering of the 31 respondents into four groups with a maximized inter-group distance and minimized intra-group distance provided groups of 1, 9, 10, and 11 subjects (18). Efforts to combine the single subject with one of the other three groups resulted in a sizeable increase in the error sums of squares. Therefore, the single subject was dropped from consideration and a three group multidiscriminate function analysis of the items within each of the five MTAI dimensions was obtained. The hierarchical groups provided mutually exclusive subsets. Thus the multidiscriminate analysis of the MTAI based on

the mutually exclusive subsets should have provided a difference between attitudes and characteristics if any existed. Results of the clustered group analysis are shown in Table 9. The results supported the conclusion that the clustered groups with maximized inter-group distance and minimized intra-group distance on the student teacher rating did not have a significant difference in group response to any of the five dimensions of the MTAI.

DISCUSSION

On the basis of the results of this study, minimal relationship seemed to exist between attitudes of student teachers expressed at the conclusion of a student teaching experience and characteristics of the student teacher as judged by experienced educators. These results coincided with results reported by Chappel and Callis (5), and Sandgren and Schmidt (15). In spite of reports to the contrary, lack of relationship between attitudes and characteristics may be due to poor predictive validity of the MTAI. A recent report by Leeds (11), who is a co-author of the MTAI, suggested that the use of the MTAI is unwarranted with student teachers and use of the MTAI should be confined to the experienced teacher.

The extent of relationship between attitudes and characteristics may also be contingent upon how a supervisor or an administrator tends to perceive teachers. Brown (2) has reported that characteristics administrators tended to perceive in teachers are clustered into four broad classes depending upon the perceptual system of the administrator. Brown further reported that the single most important activity of an administrator is personnel decisioning. Not only must the

administrator discriminate in a general way among several staff members but he must also discern the particular strengths and needs of individual teachers. Obviously, these personnel judgments are based on the relative effectiveness or worth of the individual teacher. Use of the paired comparison technique provided an "operational" taxonomy for ranking the characteristics of the student teacher. While the paired comparison technique may have limited use in the selection of teacher education candidates, it would seem to be an excellent tool for the ranking of characteristics deemed desirable by school administrators.

CONCLUSIONS

Within the limits of this investigation, little relationship was found to exist between the attitude of student teachers as expressed at the end of a student teaching experience and the ratings on characteristics desired by school administrators. The paired comparison technique for assessment of desired characteristics provided an operational taxonomy for determining the strongest characteristics of the student teacher.

TABLE 1. Correlation Coefficients Between Six General Characteristics [a]

Characteristics	1	2	3	4	5	6
1. Concern for students	1.00	-.39	.02	-.37	-.29	.14
2. Emotional maturity		1.00	-.38	.15	.02	-.46
3. Excellence of preparation			1.00	-.35	-.31	.06
4. Intelligence				1.00	-.04	-.42
5. Professional pride					1.00	-.17
6. Sense of commitment						1.00

[a] A correlation of $r = .29$ is required for significance at the .05 level

TABLE 2. Correlation Coefficients Between Nine Professional Qualifications
(N = 31)

Qualifications	1	2	3	4	5	6	7	8	9
1. Accepts suggestions	1.00	-.24	.85	-.09	.09	.05	.08	.04	-.16
2. Administrative ability		1.00	-.09	.18	.36	.25	-.05	-.06	-.15
3. Cooperative			1.00	.01	.02	.16	-.06	.19	-.16
4. Discipline				1.00	.11	.28	-.17	.25	.02
5. Initiative					1.00	-.15	.11	-.08	-.02
6. Knowledge of activities						1.00	.16	.55	.36
7. Preparation of lessons							1.00	.28	-.13
8. Teaching methods								1.00	.14
9. Use of English									1.00

TABLE 3. Correlation Coefficients Between Ten Personal Qualifications
(N = 31)

Qualifications	1	2	3	4	5	6	7	8	9	10
1. Democratic	1.00	-.23	.06	.02	-.36	-.18	.34	-.22	.47	-.10
2. Enthusiasm		1.00	-.26	.02	-.08	.21	.02	-.38	-.23	-.25
3. Appearance			1.00	.06	.13	.01	-.19	.09	-.02	-.22
4. Health and vigor				1.00	.37	-.09	-.04	.31	-.31	.15
5. Poise and Confidence					1.00	.22	-.10	.13	-.40	.39
6. Reliability						1.00	-.38	-.40	.18	-.13
7. Sense of Humor							1.00	.23	.16	-.23
8. Skill								1.00	-.22	.42
9. Tact									1.00	-.29
10. Voice										1.00

TABLE 4. Correlation Coefficients Between Scores on Five Dimensions of MTAI (N = 31)

Dimensions	1	2	3	4	5
1. Discipline	1.00	.67	.40	.43	.70
2. Principles of child development		1.00	.46	.45	.50
3. Moral status			1.00	.26	.28
4. Personal reactions				1.00	.49
5. Principles of education					1.00

TABLE 5. Results of Multidiscriminate Analysis of Four Groups of Student Teachers as Applied to Five Dimensions of MTAI

Variable	MTAI Dimensions				
	Discipline	Moral	Child Development	Personal Reactions	Principles of Education
Number of items	19	14	18	17	22
Wilks Lamda	.117	.139	.147	.225	.081
Multivariate F	0.84	0.14	0.81	0.66	0.74
% Variance by Root 1	56.78	62.83	52.68	70.53	65.66
Root 2	25.02	28.17	27.80	25.64	25.15
Root 3	18.20	9.00	19.52	3.83	9.19

TABLE 6. Correlation Coefficients Between Ratings on Six General Characteristics of Student Teachers and Scores on Five Dimensions of the MTAI (N = 31)

General Characteristics	Dimensions of MTAI				
	Discipline (19 items)	Child Development (18 items)	Moral Status (14 items)	Personal Reactions (17 items)	Principles of Education (22 items)
Concern for Students	-.01	.13	.05	-.01	.19
Emotional Maturity	.07	.09	.09	.34	-.02
Excellence of Preparation	-.29	-.18	-.29	-.25	-.14
Intelligence	.20	-.06	.01	.09	.22
Professional Pride	.06	-.05	.24	-.15	-.04
Sense of Commitment	.03	.05	-.09	-.21	-.26

TABLE 7. Correlation Coefficients Between Ratings on Nine Professional Qualifications of Student Teachers and Scores on Five Dimensions of MTAI

Professional Qualifications	Dimensions of MTAI				
	Discipline	Child Development	Moral Status	Personal Reactions	Principles of Education
Accepts Suggestions	.07	.23	.04	-.08	-.10
Administrative Ability	-.25	-.20	-.06	.07	-.20
Cooperative	-.10	.18	.05	-.18	-.30
Discipline	-.12	-.10	.20	-.02	.02
Initiative	-.16	-.01	-.13	-.13	-.01
Knowledge of Activities	-.31	-.31	-.06	-.26	-.38
Preparation of Lessons	.03	.16	-.32	.19	.01
Teaching Methods	-.44	-.24	-.07	-.27	-.19
Use of English	.27	.06	.31	-.20	.16

TABLE 8. Correlation Coefficients Between Ratings on Ten Personal Qualifications and Scores on Five Dimensions of MTAI

Personal Qualifications	Dimensions of MTAI				
	Discipline	Child Development	Moral Status	Personal Reactions	Principles of Education
Democratic	-.02	.17	.28	.32	.13
Enthusiasm	.07	.31	-.09	.16	.15
General Appearance	.26	.25	.13	.14	.13
Health and Vigor	-.46	-.06	-.26	-.22	-.48
Poise and Confidence	-.23	-.30	-.11	.02	-.22
Reliability	-.25	-.14	-.29	.10	-.10
Sense of Humor	.33	.28	.20	.29	.21
Skill	-.26	-.27	-.25	-.33	-.28
Tact	-.03	.19	.17	.33	-.04
Voice	-.15	-.31	.14	-.34	-.13

TABLE 9. Results of Multidiscriminate Analysis of Three Hierarchical Groups of Student Teachers as Applied to Five Dimensions of MTAI

Variable	MTAI Dimensions				
	Discipline	Moral	Child Development	Personal Reactions	Principles of Education
Wilks Lamda	.117	.165	.299	.164	.073
Multivariate F	0.91	1.46	0.46	0.95	0.74
% Variance by Root 1	74.20	65.32	68.40	55.34	72.29
Root 2	25.80	34.68	31.60	44.66	27.71

Evaluation of Student Teachers

Sample, I. M.	Fall-69	Ala Remote	I. C. Plenty
Student Teacher	Semester	School	Cooperating Teacher

Instructions: Please mark the choice between each of the two alternatives as they pertain to the characteristics of the student teacher under your direction.

General

( ) Intelligence	or	Excellence of preparation	( )
( ) Concern for students	or	Sense of commitment	( )
( ) Emotional maturity	or	Excellence of preparation	( )
( ) Intelligence	or	Emotional maturity	( )
( ) Concern for students	or	Emotional maturity	( )
( ) Professional pride	or	Sense of commitment	( )
( ) Intelligence	or	Concern for student	( )
( ) Professional pride	or	Concern for student	( )
( ) Professional pride	or	Emotional maturity	( )
( ) Sense of commitment	or	Excellence of preparation	( )
( ) Excellence of preparation	or	Concern for students	( )
( ) Sense of commitment	or	Emotional maturity	( )
( ) Intelligence	or	Sense of commitment	( )
( ) Professional pride	or	Excellence of preparation	( )
( ) Intelligence	or	Professional pride	( )

FIGURE 1. Format for paired comparison evaluations of six items in general category.

Characteristics of Student Teacher I. M. Sample

General Category		
Concern for students	𝍸	5
Emotional maturity	I	1
Excellence of preparation	III	3
Intelligence	II	2
Professional pride		0
Sense of commitment	IIII	4

FIGURE 2. Tally sheet to determine the ranking of the six general characteristics of a student teacher.

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